

having a diameter or width of 50nm or more in the n-type silicon substrate. However, the present invention is not limited by the size of the pore or trench.

Replace the paragraph beginning at page 1, line 24 with:

Japanese Patent Publication No. 2,694,731 discloses an electrochemical etching system which uses light to form small pores or trenches in an n-type doped silicon substrate. The system has a holder for holding the n-type doped silicon substrate (silicon wafer) with one surface of the substrate contacted with an electrolyte (hydrofluoric acid). Also, the holder retains an electrode in the electrolyte so that the electrode opposes the silicon substrate. With this etching system, the silicon substrate is positively biased and the electrode in the electrolyte is negatively biased. The opposite side of the silicon substrate away from the electrolyte is exposed to light, causing holes in the silicon substrate. The holes travel a boundary region between the silicon substrate and the electrolyte to resolve the boundary portion of the silicon substrate. This means that an arrangement of a masking barrier (coating) with one or more apertures (pits) on the surface of the silicon substrate adjacent to the electrolyte, results in the formation of the pores or trenches in the substrate portions, corresponding to the apertures.

Replace the paragraph beginning at page 2, line 20 with:

The Journal of Electrochemical Society, No. 140, October 1993, pp. 2836-2843 discloses a back light device for the illumination of a silicon substrate. The light device has a lamp for emitting light, an infrared filter for removing infrared light from the emitted light, and a convex lens for collimating the light emitted from the lamp.

Replace the paragraph beginning at page 3, line 1 with:

Also, the Journal of Electrochemical Society, No. 137, February 1990, pp. 653-659 discloses an electrochemical etching device which uses a 100W tungsten lamp for the back light device.

Replace the paragraph beginning at page 3, line 5 with:

Further, Japanese Patent Publication No. 11-509644 discloses a system for manufacturing devices with electrochemical etching. Japanese Patent Publication No. 11-154737 discloses a manufacturing system for incorporating a capacitance in the trench formed by the electrochemical etching technique. The Journal of Electrochemical Society,

No. 137, February 1990, pp. 653-659 discloses an embodiment in which an aperture or trench of 20 x 20 mm is formed in the silicon substrate by the etching technique.

Replace the paragraph beginning at page 4, line 9 with:

Another object of the present invention is to provide devices, e.g., semiconductor devices and sensors, such as acceleration sensors, manufactured through such electrochemical etching method.

Replace the paragraph beginning at page 10, line 21 with:

Fig. 4 is an enlarged cross sectional view taken along lines IV-IV in Fig. 3, showing the grid electrode layer in an exaggerated fashion;

Replace the paragraph beginning at page 11, line 14 with:

Figs. 10A and 10B are a schematic plan view and a detail view of the grid electrode plate for use in the electrochemical etching system according to the seventh embodiment;

Replace the paragraph beginning at page 27, line 18 with:

Although in the first embodiment the grid metal layer is integrally formed on the back surface of the silicon substrate, it may be formed as an independent member capable of being separated from the silicon wafer. Specifically, Fig. 10A shows a grid metal plate 140 made of an electrically conductive material and Fig. 10B shows a detail view of the grid metal plate. Preferably, as described above, the size of the grid 142 and of the openings 144 in the grid metal plate 140 are determined so that the size of the grid 142 is smaller than the thickness of the silicon substrate.

IN THE CLAIMS:

Replace the indicated claims with:

1. (Amended) An electrochemical etching system, comprising:
an etching bath for holding an n-type silicon substrate so that a first surface of said silicon substrate contacts hydrofluoric acid;
an electrode positioned in the hydrofluoric acid;